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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/827,760   | 04/06/2001  | Harold L. Simonsen   | 528-009766-US(PAR)  | 6115             |
| 7590   | 06/01/2005  |                      | EXAMINER            |                  |
| Geza C. Ziegler<br>Perman & Green, LLP<br>425 Post Road<br>Fairfield, CT 06430 |             |                      | RYMAN, DANIEL J     |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2665                |                  |

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/827,760

Applicant(s)

SIMONSEN ET AL.

Examiner

Daniel J. Ryman

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-9,11-17 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-9,11-17 and 19-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see Response, filed 12/30/2004, with respect to the rejection(s) of claim(s) 1-19 (specifically, claims 5 and 12-19) under Nelson, Jr. et al. (PGPub 2002/0080024) have been fully considered and are persuasive since Nelson does not teach a TDMA system. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Richardson et al. (USPN 5,369,637) and Marshall (USPN 5,502,744).

### *Claim Objections*

2. Claim 21 is objected to because of the following informalities: claim 21 is confusing, as written. Claim 21 would be better written as "The system of claim 1 further comprising the high signal to noise ratio channel used to maintain TDMA slots timing, link synchronization and slot management, *wherein* the slot management *is* independent of a data transport channel, *where the data transport channel is* a separate user channel *used* as a dedicated conduit for transport of user data that can be dynamically adapted to provide different power *and* rate control at each slot to provide optimal performance based on user needs and a link environment." Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 2665

4. Claims 4 and 7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

5. Claim 4 contains the limitation “wherein the broadcast link is a continuous transmission of link maintenance information from the central node to the remote node.” However, the specification discloses that “[t]he broadcast link 40 is generally a continuous transmission from the central node 20 to each of the remote nodes 30 and can be used to transmit data and information from the central node 20 to each remote node 30” where “[t]he broadcast link 40 includes a channel that is adapted to transfer unique link maintenance information from the central node 20 to the remote nodes 30” (specification: pg. 5, line 20-page 6, line 2). If the broadcast link includes only a single channel to transmit data and information, then the broadcast node cannot also continuously transmit link maintenance information.

6. Claim 7 contains the limitation “wherein the one channel and the other channel [are] in an orthogonal relationship.” The specification discloses that the channels are made to be orthogonal to one another by spreading the channels using Direct Sequence/Spread Spectrum modulation (page 9, lines 23-30), which Examiner equates to CDMA. Claim 1, which claim 7 depends upon, contains the limitation “a time division multiple access link.” In the Response filed 12/30/2004, Applicant asserts that the previously cited Nelson reference is inapplicable to the claimed invention since the claimed invention recites TDMA, not CDMA. As such, the TDMA link claimed in claim 1 cannot be made orthogonal through CDMA techniques since CDMA is inapplicable to Applicant’s TDMA link.

Art Unit: 2665

*Claim Rejections - 35 USC § 103*

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3, 5, 8, 9, 11-17, and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richardson et al. (USPN 5,369,637) in view of Marshall (USPN 5,502,744).

9. Regarding claims 1 and 12, Richardson discloses a communications system comprising: a central node (ref. BS: base station) adapted to transmit information over a broadcast link (downstream) to at least one remote node (ref. 16: mobile transceiver unit) (col. 2, lines 45-68); at least one remote node adapted to receive information transmitted from the central node over the broadcast link (col. 2, lines 45-68) where it is implicit that the downstream link is broadcast to all nodes in the system; and a communications link (upstream) comprising a time division multiple access link using bi-BPSK modulation (col. 2, line 3), with one first channel (ref. M, 22, and 26: control channel) to provide all link maintenance and management functions for the broadcast link and time division multiple access link (col. 1, lines 49-62; col. 2, lines 51-55; and col. 3, lines 4-12) where it is implicit that a control channel is used to provide link maintenance and management functions, and another second channel (traffic channel) providing bandwidth-on-demand for transferring only user data and to meet bandwidth needs on demand of individual remote nodes (col. 1, line 39-col. 2, line 8 and col. 3, lines 58-68), the communications link adapted to convey information from the remote node to the central node (col. 2, lines 45-68) where this is implicit in a communication system, the central node being adapted to dynamically

Art Unit: 2665

tailor a remote node transmit power control and a bandwidth as requested by the remote node for conveying information over the communications link (col. 1, line 39-col. 2, line 8 and col. 3, lines 58-68).

Richardson does not expressly disclose that the one first channel operates at a lower data rate to achieve a high signal-to-noise ratio. Marshall teaches, in a wireless communication system, transmitting an important signal at a lower data rate to achieve a high signal-to-noise ratio in order to ensure that the important signal is properly received (col. 1, lines 48-61 and col. 5, lines 9-17) where control information is important since it is necessary for proper operation of the channel. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to transmit the one first channel at a lower data rate to achieve a high signal-to-noise ratio in order to ensure that the one first channel is properly received.

10. Regarding claim 2, Richardson in view of Marshall discloses that the broadcast link transfers link maintenance information over the one channel from the central node to each of the remote nodes (Richardson: col. 1, lines 49-62; col. 2, lines 51-55; and col. 3, lines 4-12).

11. Regarding claim 3, Richardson in view of Marshall discloses that the link maintenance information is data used to maintain and manage the broadcast link and the communications link (Richardson: col. 1, lines 49-62; col. 2, lines 51-55; and col. 3, lines 4-12).

12. Regarding claim 5, Richardson in view of Marshall discloses that the communications link comprises time division multiple access link using multi-phase shift key waveform (Richardson: col. 1, line 66-col. 2, line 4).

13. Regarding claim 8, Richardson in view of Marshall discloses that the one channel is adapted to provide slot timing, communications link synchronization and slot management

Art Unit: 2665

functions, the slot management functions being independent of the other channels (Richardson: col. 1, lines 49-62).

14. Regarding claim 9, Richardson in view of Marshall discloses that the one channel is adapted to provide all management functions for the communications link and the other channel is adapted to meet remote node bandwidth needs on demand (Richardson: col. 1, line 39-col. 2, line 8 and col. 3, lines 58-68).

15. Regarding claim 11, Richardson in view of Marshall discloses that the other channel is adapted to adjust wideband channel performance for transfer of user data on a slot by slot basis (Richardson: col. 1, line 39-col. 2, line 8 and col. 3, lines 58-68).

16. Regarding claim 13, Richardson in view of Marshall discloses that the first channel is an embedded, high signal-to-noise ratio, tracking channel (Richardson: col. 1, line 39-col. 2, line 8 and col. 3, lines 58-68 and Marshall: col. 1, lines 48-61 and col. 5, lines 9-17).

17. Regarding claim 14, Richardson in view of Marshall discloses that the second channel is adapted to provide a dedicated conduit for transmitting user data from the remote node to the central node (Richardson: col. 1, line 39-col. 2, line 8 and col. 3, lines 58-68).

18. Regarding claim 15, Richardson in view of Marshall discloses that the second channel is a channel adapted to be rate adjusted for an individual remote node to accommodate a required data bandwidth for the remote node (Richardson: col. 1, line 39-col. 2, line 8 and col. 3, lines 58-68). Richardson in view of Marshall does not expressly disclose that the second channel is a wideband channel; however, Examiner takes official notice that it is well known in the art to use a wideband channel since this offers greater bandwidth compared to a narrowband channel.

Art Unit: 2665

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a wideband channel in order to have a greater amount of bandwidth.

19. Regarding claim 16, Richardson in view of Marshall discloses that the time division multiple access link can adjust a performance of the wideband channel on a slot-by-slot basis (Richardson: col. 1, line 39-col. 2, line 8 and col. 3, lines 58-68).

20. Regarding claim 17, Richardson in view of Marshall discloses each limitation of claim 17, as outlined in the rejection of claims 1 and 12, except requesting a new remote node transmit power control and a new transmit data bandwidth from the central node by sending a request from the remote node the central node over the time division multiple access communications link, and implementing the change one remote node slot time subsequent to the request.

However, Richardson in view of Marshall further discloses that a mobile unit is assigned a time slot by the base station based upon the mobile unit's need (Richardson: col. 3 lines 58-68 and col. 5, lines 49-54). Richardson in view of Marshall also discloses that the slots are reallocated when required (Richardson: col. 1, line 39-col. 2, line 9 and col. 3 lines 58-68). Thus, Richardson in view of Marshall suggests requesting a new remote node transmit power control and a new transmit data bandwidth from the central node by sending a request from the remote node the central node over the time division multiple access communications link (Richardson: col. 3 lines 58-68 and col. 5, lines 49-54), and implementing the change one remote node slot time subsequent to the request (Richardson: col. 1, line 39-col. 2, line 9 and col. 3 lines 58-68).

21. Regarding claim 19, Richardson in view of Marshall suggests that the step implementing the change further comprises the step of dynamically configuring the wideband channel to



Art Unit: 2665

accommodate the new transmit data bandwidth on a slot by slot basis (Richardson: col. 3 lines 58-68 and col. 5, lines 49-54).

22. Regarding claim 20, Richardson in view of Marshall suggests the step of dynamically assigning one or more slots to a new remote node entering the network (Richardson: col. 1, line 39-col. 2, line 9; col. 3 lines 58-68; and col. 5, lines 49-54).

23. Regarding claim 21, Richardson in view of Marshall discloses the high signal to noise ratio channel used to maintain TDMA slots timing, link synchronization and slot management (Richardson: col. 1, lines 49-62; col. 2, lines 51-55; and col. 3, lines 4-12), the slot management being independent of a data transport channel (Richardson: col. 1, lines 49-62; col. 2, lines 51-55; and col. 3, lines 4-12), a separate user channel as a dedicated conduit for transport of user data that can be dynamically adapted to provide different power, rate control at each slot to provide optimal performance based on user needs and a link environment (Richardson: col. 1, line 39-col. 2, line 8 and col. 3, lines 58-68).

24. Regarding claim 22, Richardson in view of Marshall discloses including only two separate channels in each slot, one channel being the high signal to noise ratio channel and the other being the wideband channel (Richardson: col. 3, lines 4-12).

25. Regarding claim 23, Richardson in view of Marshall discloses maintaining TDMA slot timing, link synchronization and slot management on the high signal-to-noise ratio channel (Richardson: col. 1, lines 49-62; col. 2, lines 51-55; and col. 3, lines 4-12) and transporting data only on the wideband channel (Richardson: col. 1, line 39-col. 2, line 8 and col. 3, lines 58-68).

Art Unit: 2665

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 7:00-4:30 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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